

WHAT IS CLAIMED IS:

1. A gas turbine power generation system, comprising:
 - a single-spool gas turbine engine having a turbine and a compressor coaxially connected to the turbine,
 - 5 an air intake duct that supplies intake air to the engine;
 - a generator connected to a rotating shaft of the engine,
 - a housing that houses the engine, the air intake duct and the generator and is formed to be a box-like shape having at least two openable maintenance faces; and
 - 10 a partition that divides interior space of the housing into two regions in vertical direction into an upper bay and a lower bay such that the engine is installed in the upper bay and the air intake duct is installed in the lower bay at a location directly under the engine.
- 15 2. A system according to claim 1, wherein the two openable maintenance faces of the housing are a top face and a face that lies parallel to the rotating shaft of the engine.
- 20 3. A system according to claim 2, further including an exhaust duct that exhausts combustion gas discharged from the engine to outside of the housing, and the exhaust duct is installed in the upper bay of the housing at a location near a face that is opposite, relative to the engine, to the face that lies parallel to the rotating shaft of the engine.
- 25 4. A system according to claim 1, further including an electrical unit that is electrically connected to the generator, and the electrical unit is installed in the lower

bay of the housing at a location under the air intake duct.

5. A system according to claim 4, further including a cooler that cools the
5 electrical unit by external air.

6. A system according to claim 1, further including a fuel supplier that supplies
fuel to the engine and a cooler that cools the fuel supplier by external air, and the fuel
10 supplier and the cooler are installed in the lower bay of the housing.

7. A system according to claim 1, wherein the housing is formed with grooves
at its bottom fact that receive forks of a forklift.

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8. A gas turbine power generation system, comprising:
a single-spool gas turbine engine having a turbine and a compressor coaxially
connected to the turbine,
20 an air intake duct that supplies intake air to the engine;
a generator connected to a rotating shaft of the engine, and
a housing that houses the engine, the air intake duct and the generator and has
an openable maintenance face;

wherein:

25 the air intake duct includes:
a duct section that has an air inlet at a plane coincident with that of the
openable maintenance face; and
a filter-housing section that detachably houses an air filter for cleaning the

intake air.

9. A system according to claim 8, wherein the duct section and the
5 filter-housing section are airtightly joined such that the air intake duct can be taken out
through the openable maintenance face as a single unit.

10. A system according to claim 8, wherein the duct section is formed to be a
10 structure that changes flow direction of the intake air at least once when the intake air
flows from the air inlet to the filter-housing section.

11. A system according to claim 8, further including:
15 a divider that divides interior space of the housing into two regions into an
upper bay and a lower bay such that the engine is installed in the upper bay and the air
intake duct is installed in the lower bay, and
an air intake passage provided in the divider such that the intake air passes
through the air filter of the air intake duct to the engine.

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12. A system according to claim 11, wherein the air intake passage is formed to
be a structure that changes flow direction of the intake air at least once therein.